

# Manor New Technology High School

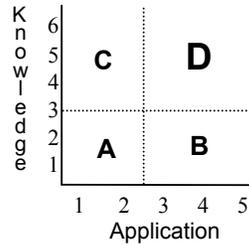
Manor, Texas

Prepared by International Center for Leadership in Education

## A Model of

- Personalization
- STEM initiative
- Project-based learning
- Technology integration
- Authentic assessment
- Interdisciplinary instruction
- Collaborative leadership

## Rigor/Relevance Framework



## By the Numbers

- 300 students
- 75% minority
- 100% graduation rate
- 97% attendance rate
- 65% free/reduced lunch
- 11% students with disabilities
- 6% English language learners.
- AYP met

## Executive Summary

The Manor Independent School District is located just outside the Austin city limits and 12 miles east of the University of Texas in the rural community of Manor, Texas. The Manor community has become a hub for the central Texas technology industry, with industry giants such as Applied Materials and Samsung listed on their tax rolls. Manor was a small rural town of about 1,200 residents just 10 years ago; the population has more than tripled in this time period. Manor ISD draws from the town of Manor and surrounding communities and is also experiencing a phenomenal growth in student enrollment, which now stands at 6,932 students for 2009-10.

In the past decade, the Manor school community faced many challenges, including unacceptable graduation and dropout rates, low scores on standardized tests, students not engaged in their learning, and graduating students not prepared for success at work or in college. Manor ISD decided the New Tech model best suits their school, community, and student needs. Manor New Technology High (Manor) is one of 48 New Tech high schools in the United States that represent a new generation of schools which orient instructional practices and school culture around 21<sup>st</sup> century skills. The school is also one of 35 sites selected to partake in the Texas Science, Technology, Engineering, and Mathematics (T-STEM) initiative to improve instruction and academic performance at schools across the state.

At Manor New Technology High students engage in project-based curricular units with real-world relevance which emphasize teamwork; with a one-to-one student-to-computer ratio, technology becomes a foundation tool for learning. In addition to state content standards, students are evaluated on work ethic, oral literacy, written literacy, teamwork, and critical thinking. Community service and college credits via dual enrollment courses are required of all graduates of Manor; an internship is recommended but at this time not required. The New Tech High Learning System™ is a unique suite of software tools that supports a collaborative learning environment oriented around 21<sup>st</sup> century learning, a project-based learning approach, and authentic assessments on multiple measures. GradePortal allows educators, students, and parents 24/7 access to class assignments and records of individual student progress, providing transparency in curriculum, instruction, and assessment.

Manor opened its doors in August 2007 to 156 students consisting of a full 9<sup>th</sup> grade and reduced 10<sup>th</sup> grade, and will graduate its first senior class of 39 students this year. Students apply for admission and are selected by lottery; the demographics of the school mirror reasonably closely that of the Manor Independent School District. Presently there are approximately 300 students at Manor, and next year the school will be at its anticipated capacity of 400 students.

Manor New Technology High presently enrolls approximately 300 students; 75% are minorities, 65% are eligible for free/reduced lunch, and 11% are students with disabilities. Manor will graduate 100% of its first senior class this year, with all anticipated to attend postsecondary education, 90% at four-year institutions. Over 50% are first generation college-bound students. Staff at the high school include the principal, dean of student services/counselor, an administrative assistant, two master teachers,

and 28 teachers. The school year is organized into trimesters and the school day consists of five classes, some interdisciplinary, of 75 minutes each. Advisories meet once a week on Mondays, with teachers assigned small groups of students to monitor and work with throughout their four years. Also on Mondays the entire learning community engages in a 20 minute Drop Everything and Read (DEAR) activity. Before class once a week the entire school gathers as a community in the gym for Circle Time to recognize student and faculty accomplishments, announce initiatives, or for important reminders on programs or testing.

## **1. School Culture**

Manor teachers and staff are committed to providing all students with rigorous learning and personalized relationships to ensure their success as responsible, globally conscious citizens. The curriculum brings together the strength of modern technology, community partnerships, problem solving, interdisciplinary instruction, and global perspectives in a student-centered, collaborative, project-based community. Manor has specific learning outcomes.

- Technology Literacy – The student selects and utilizes appropriate technology to effectively perform a variety of tasks.
- Global and Community Engagement – The student explores different perspectives on global, cultural, and local issues and values, leading to action in the community.
- Work Ethic – The student demonstrates commitment to their team, personal responsibilities, and tasks.
- Written Communication – The student effectively expresses and constructs ideas in writing clearly, concisely, and correctly to a variety of audiences.
- Oral Communication – The student speaks correctly, eloquently, and effectively before a variety of audiences for multiple purposes.
- Critical Thinking – The student gathers, analyzes, and synthesizes information in a variety of contexts.
- Collaboration – The student actively and respectfully contributes to a team to solve problems while working towards a common goal.
- Numeracy – The student applies computation, measurement, estimation, and data evaluation in various settings.

The environment at Manor New Technology High School is safe, orderly, respectful, and supportive. The school staff foster a sense of responsibility, accountability, integrity, and perseverance on the part of students. The adults serve as excellent role models for students and believe that relationships are an important prerequisite to student success in and out of the classroom. Students are treated with respect and teachers value their opinions.

Manor New Tech has highlighted the importance of relationships first, followed by relevance, then rigor. The strong commitment to personalization, teamwork, and collaboration has dramatically increased the interactions between and among students and staff in classes. Administrators and teachers report that traditional discipline referrals declined and interventions have shifted to be more preventive and positive, often focusing on a student's academic difficulties or relationships. Students and staff alike report a greater sense of community, understanding, respect, and cooperation.

Work ethic is measured in all New Tech classes. Students have developed outstanding project management skills, and students use technology that emulates the workplace environment. Projects average approximately three weeks in length, culminating in a student presentation and evaluation of the project. Students gain valuable insights and experience in how to set priorities and use technology effectively.

## **2. Foundation Learning**

New Tech is a project-based learning (PBL) model that emphasizes collaboration, writing and oral presentation skills, work ethic, effective use of technology, and the development of ethics and citizenship. Specifically, the New Tech model is based on seven core principles:

- create a culture of respect and trust among students and staff in a small school environment
- focus on 21<sup>st</sup> century skills as well as state content standards
- implement student-centered, project, and problem-based learning methodology to increase relevance and rigor
- design courses and curriculum to connect learning and other activities to the post-high school world
- use technology as a tool for communicating, collaborating, and learning
- partner with community groups, higher education institutions, and business
- contribute to high school reform.

Graduates of Manor complete four years of English and social studies, at least five years each of mathematics and lab based science, two years of Project Lead The Way engineering courses, two years of technology, and three years of world language (Spanish) in addition to minimum requirements in physical education, health, fine arts, and other electives, for a minimum of 28 credits. A minimum of 12 college credits are required, and can be earned through junior and senior humanities courses in cooperation with Austin Community College. Students must also complete 50 hours of community service, maintain a digital portfolio, and pass all four Texas Assessment of Knowledge and Skills (TAKS) exit level examinations.

Manor does recognize that successful achievement on local, state, and national assessments are indicative of core learning. Approximately every six weeks students are given a local assessment used in the Manor ISD in English, social studies, mathematics, and science. Manor views these as necessary to provide legitimacy for their program, as students at Manor New Technology High have consistently exceeded local and state scores in all four areas since opening. Specifically, on the 2009 TAKS, the following passing rates are reported:

- English language arts – Manor 92%, local 82%, state 89%
- social studies – Manor 95%, local 81%, state 88%
- mathematics – Manor 73%, local 44%, state 70%
- science – Manor 86%, local 47%, state 75%.

While only completing its third year, Manor has been recognized as a New Tech Demonstration School, an Apple Distinguished Campus (one of 24 nationally), SMART Showcase school, a fully certified Project Lead The Way school, and a Texas Education Agency (TEA) recognized campus. Secretary of Education Arne Duncan highlighted Manor New Technology High School in his March 2010 speech to the Association of American Publishers as a “model for reaching underserved youth.”

### **3. Stretch Learning**

Stretch learning at Manor New Tech is different from what one might see at a traditional high school. Manor integrates stretch learning in its core curriculum through the use of real-world applications, relevant content, and project-based learning. While all projects are carefully selected and aligned with state and national content standards, the curriculum is not a mile wide and an inch deep. Quality versus quantity of work is the norm, as teachers want students “to know how to fish versus how to find them.” Entry documents for projects may be written, but increasing numbers are video-based, and demonstrate not only a level of commitment on the part of the teacher but also a creative, exciting, and challenging introduction to a project. Scaffolding activities are built into each project, with much more direction for

freshmen than upperclassmen. Criteria for work, graded as unsatisfactory, satisfactory, or high achieving, are known in advance, providing students with clear direction about the quality of work expected and the grade earned. Small group or class workshops are conducted by teachers or peers as needed. Teachers assume the role of resource specialists who set expectations and guidelines, align work with standards, and design rubrics. Students are responsible for setting timelines, designing projects, and producing deliverables. There is no tracking or honors section, and all students are exposed to the same projects. While there are occasional group instruction and workshop/lecture activities, much of the work is organized around projects that allow students great flexibility in designing end products.

Interdisciplinary courses are team-taught in English language arts and social studies in grades 9, 10, and 11. In addition, Algebra II/Physics, Pre-calculus/Scientific Research and Design, Statistics/Environmental Science, and Algebra I/Geometry are also team-taught. In each instance the casual observer will find it difficult to identify the subject area specialist, as projects are carefully selected, devised, introduced, and implemented. Students work easily with both teachers, and technical content-specific questions are answered by the subject specialist when necessary.

Project- and problem-based learning, as well as stretching students, is not confined to the core or team-taught classes. Students in physical education, health, language, technology, and engineering are involved in designing effective fitness programs, analyzing nutritional content of meals, making connections and comparisons among cultures, devising ad campaigns, and creating the newspaper, yearbook, or engineering designs.

Outside of the opportunity to earn college credit via the junior and senior English and social studies classes at Manor, students may earn dual credit in a wide variety of approved classes. Students are limited to a maximum of two college courses a semester, and tuition is free if they choose to enroll at nearby Austin Community College.

Well-defined rubrics with multiple criteria tied to state and national standards are used for project assessment; Manor New Tech has found that many more students are successful in passing classes, since they can demonstrate competence in more ways than using traditional assessments. Students do not see the teacher as an obstacle to achievement. Students who would be average or below average under a traditional system often flourish under New Tech, as they can play to their strengths, according to one student interviewed. Teachers observe that high-ability students have been challenged much more than in the past. The products required in a project go beyond the memorization and recall that were the former standard. Almost all projects utilize writing, mathematics, oral presentation, technology skills, and technical reading. Students who finish projects early are encouraged – and rewarded – when they go the extra mile and review the assessment rubric.

#### **4. Learner Engagement**

By changing the teaching and learning environment a new dynamic has emerged in New Tech classrooms. Students are engaged in their learning through rigorous, standards-based, project learning implemented in a one-to-one computer-student environment. While the technology provides access to tools that support each student's work, each project is typically completed by a team of students working collaboratively. They rarely work in isolation and often are asked to present before their peers or authentic audiences. Manor teachers report that the most effective teams are those consisting of two or three students; occasionally, more than three students might be involved as a team, but this is rare. Projects bring meaning and life to the academic content, while at the same time develop student empowerment and ownership of learning outcomes driven by team-based collaboration strategies.

In a typical instructional period, the teacher might present a brief workshop to the entire class, a particular group, or group leaders/liaisons, outlining core principles of a lesson or reviewing concepts that students need additional assistance in learning. Teachers and students alike felt that the flexibility to adjust instruction and learning to meet the needs of students is critical for success and achievement.

Students then break into small learning groups for project work or use computers for research and study. Students ask peers with special knowledge to tutor them if that will improve their project. The

teacher moves freely from one group to another, observing, commenting, and suggesting, as appropriate. Individual extra help can be provided much more naturally and easily in a New Tech class – by the teacher or fellow students.

Relationships are crucial for success in PBL. Students must feel safe in asking questions and seeking directions. The relationship between teacher and student is cordial and supportive. Teachers must learn students' strengths and offer challenges beyond academics to facilitate group dynamics. The atmosphere is one of a true learning community in which all are growing intellectually and socially.

Teachers and administrators consistently report that students are more actively engaged in New Tech classes, although they also report that it is easy to spot students who are totally disengaged – either visually during the class or by utilizing the Learning Management System. While some students said it takes time to acclimate, and others said they were better book learners, most students felt the grading system was fair, as it was known ahead of time; assessed skills other than just by a unit test; and allowed them to achieve better grades by working harder in their individual areas of strength. Objective indicators such as the 97% attendance rate, 97% return rate to Manor each year, 96% promotion rate, and 100% graduation rate speak well for the level of engagement and success of students at the school.

Meetings with students produced an interesting variety of reasons why they attend Manor – from needing a challenge in school to being “persuaded to come by my parents.” Students were very astute and honest in their assessment of the strengths and drawbacks of attending a smaller school with less academic and extracurricular opportunities than the district's much larger high school. However, one would be hard pressed to find students who didn't feel the smaller, collaborative, project-based environment suits their individual learning style or will prepare them better for postsecondary education or the world of work. Since Manor New Technology High is on the campus of Manor High School, students do have the opportunity to engage in the extracurricular activities offered there, such as athletics, marching band, dance team, theatre, and service organizations.

## **5. Personal Skill Development**

21<sup>st</sup> century skills are an integral component of the program at Manor. These skills, taught in New Tech classes, include oral and written communication proficiency, work ethic, positive personal character, and technology skills. Students feel that the work they do as part of a team improves not only their collaboration skills but also their leadership skills. While awkward at first for some, most students feel very comfortable talking to various groups, whether they are peers, teachers, visitors, or adults in the community. Students present at the conclusion of each project in every class, providing them with over 60 opportunities a year to practice and improve. Students lead learning tours, sit on panels for visitors, and have become outstanding ambassadors of the school and program.

Typically a dozen projects or more may be accomplished in each class each year, and deadlines may seem deceptively far away. A typical project may last from two to six weeks, with three weeks being the average. Students must develop effective time management skills, and the school and teachers are becoming more comfortable and adept in guiding students in this regard. All students, especially upperclassmen, report that they have learned better time management skills, as well as become more proficient and comfortable moving between independent learning and working as part of a team.

New Tech staff use technology to support the school culture and instructional methods, creating a workplace environment for the students. Teachers store projects in digital briefcases and post their daily course agendas and student grades to the web. Students have their own email accounts and server space, and create digital portfolios of their work. Grades, assignments, rubrics, and assessments are available 24/7 for students, parents, and teachers, and provide much transparency in curriculum, instruction, and assessment.

A Group Project Contract is initiated for each project, and students must specify the tasks, members involved, individual and group responsibilities, deadlines, and expected outcomes that will be graded. Groups are formed for each project, with teachers maintaining control but accepting student input

regarding the constitution of a group. A unique feature of the group contract outlines the reasons a group may fire a nonproductive member.

Outside of those associated with being part of a project-based environment and team, Manor students have other leadership opportunities, including student government, Key Club, yearbook, newspaper, National Honor Society, and FIRST Robotics.

## **6. High-quality Curriculum and Instruction**

The New Tech school model places a high value on integrating critical 21<sup>st</sup> century skills with traditional course content. To accomplish this, problem-based learning is the primary instructional strategy. New Tech teachers say they can focus on instruction, look for the best method to teach a topic, differentiate better, and move away from relying on the textbook as a primary source. Instead of handing out daily assignments, teachers assign periodic projects with different components. Components may include a written essay and a digital project, such as a website, PowerPoint presentation, or photo essay. Typically, students are asked to present their work orally to their classmates or other audiences. Through a relevant, rigorous, standards-based, one-to-one computer-to-student environment, students develop a wide range of skills, including collaboration, critical thinking, and technology proficiency, that better prepares them for success in postsecondary education and the modern workforce. Integrating reading, writing, speaking, listening, and mathematics skills in addition to collaboration, critical thinking and problem solving is the norm rather than the exception.

All classes at Manor are designed to align with local, state, and national standards, while at the same time providing students with rich, interesting, and varied learning experiences. Projects cited by either students or teachers as favorites include the following.

- Engineering – designing a medieval castle in a project that correlated with the Renaissance being studied in social studies; redesigning the classroom for more efficient use of space and resources.
- Chemistry – determining the effect of temperature on solubility of gases using soda bottles.
- Biology – creating superheroes and the effect on the organs in the body; designing a sanctuary for an endangered species; writing a song as review for the TAKS.
- Algebra II/Physics – performing lab experiments to learn about mirrors and lenses, then building a telescope.
- U.S. History/Digital Media – creating a World War II superhero and comic book.
- English Language Arts/Social Studies – studying personality disorders in a project entitled “Nobody Understands Me;” creating a National Geographic-type magazine about the various peoples, cultures, and regions in Africa.
- Mathematics – launching marbles and other random objects in the Stunt Kid project; creating 3D scale models for “Survivor.”
- Physics – designing a roller coaster, then developing a marketing plan to sell the coaster to the Engineering class.
- Digital Media – creating a web series and a documentary on paranormal behaviors.
- English Language Arts – designing greeting cards for unusual circumstances.
- Graphics Design – creating a “Kids Kindle” and audio/picture books for children, some in Spanish.
- Integrated Physics-Chemistry/Algebra – finding the equilibrium between buoyant force and weight to predict the amount of doubloons from a sinking pirate ship a lifeboat will hold!
- Spanish – designing children’s books, city posters, or commercials in the target language.

Manor has chosen to emphasize dual credit college classes as opposed to Advanced Placement offerings to avoid luring students from the high school. Students can earn upwards of 18 college credits via junior and senior humanities classes, in addition to up to six college credits at Austin Community College (free) each semester after the sophomore year.

All students are required to take two credits of engineering. Project Lead The Way classes include Introduction to Engineering Design, Principles of Engineering, and Digital Electronics. Many of the projects are inspired by the Top 20 Challenges from the National Academy of Engineering. Group roles and responsibilities are based on engineering models, having a design manager, production manager, and quality manager.

## 7. Use of Data at Classroom and Building Levels

Manor New Technology High is a data-driven, results-oriented organization that tracks student progress on a wide variety of measures and provides all its constituents an accurate picture of their successes and challenges. The school believes that to keep gaps in student learning narrow it must be very deliberate and diligent. Disaggregated data on student achievement on the TAKS, PSAT, and SAT, as well as pass/fail statistics on all courses, is maintained. Other data monitored by the school includes graduation, dropout, mobility, and attendance rates; numbers of students taking and successfully completing dual enrollment courses; and numbers of students needing credit recovery courses. Since the school is only three years old, PSAT and SAT data is just being added.

All staff have participated in professional development on data-driven decisions. They are adept at analyzing and disaggregating data, determining needs, writing high-level questions, and designing projects and assessments that meet those needs. In a short period of time the staff at Manor have become a resource not only in Manor ISD but throughout the state.

While much classroom work is project-based and involves working in teams, there is a great deal of flexibility for individual work, input, and assessment. A cursory look at grade folders from various classes indicates that students might receive grades for critical thinking, oral and written communication, work ethic, and collaboration. Other grades may reflect homework, quizzes and unit tests, journals, lab write-ups, and presentations. Quizzes, end of project paper and pencil assessments, as well as six week district benchmark assessments provide the school and district with valuable information on student progress and achievement.

One of the powerful features of the Learning Management System is that it provides teachers with comprehensive and instantaneous feedback on student progress on a variety of measures for each project. For instance, it is relatively easy for a teacher to determine whether a student or group of students are having difficulty mastering a concept – and the teacher can provide individual help or conduct an appropriate workshop to address the deficiency.

Teachers must become comfortable and adept with computer skills and have the capacity to develop specific expertise with the New Tech Learning System, entitled PeBL™, which drives the curriculum and learning. Some of the features of the system are described here.

- The Project Briefcase is a digital library that holds the teacher-created documents, web links, evaluation rubrics, and scaffolding activities that students use for each unit. The briefcase also serves as an important tool for capturing and sharing curriculum.
- The Project Library is a collection of projects developed for the classroom by other New Tech teachers that can be downloaded and edited.
- The Course Calendar allows teachers to post links to classroom activities related to projects so that students are aware of project tasks to be completed.
- The Digital Journal provides teachers with a way to assure that students are on course and understand the content. This tool can also be used for homework and other assignments.
- A Bulletin Board can be used by teachers and administrators to create student and teacher discussion forums for instructional or general interest purposes.
- The Staff Agenda is an interactive communication tool used to develop a positive staff culture. Meeting agendas and topics are posted digitally to get the conversation started.

- The Grade Portal allows teachers to record separate skill evaluations for each assignment. Content, collaboration, work ethic, and other data are displayed separately and provide students, parents, and teachers with a comprehensive indicator of a student's strengths and weaknesses.
- An Evaluation Tool allows teachers to create, post, and store rubrics used to evaluate student performance on projects. A Peer Evaluation and Feedback tool allows students to enter peer evaluations of projects or of separate components, such as collaboration within the group.
- The Digital Portfolio is student-managed, highlights each student's success at mastering the school's learning outcomes, and allows for a much deeper presentation of student understanding, knowledge, and achievement.

## **8. Transitions**

The staff and current students have been proactive in the recruitment and education of prospective students and parents to Manor New Technology High. In the spring, Manor students visit the two middle schools to initiate the recruitment and transition process and speak about project-based learning, the culture, and the various academic and extracurricular opportunities. Manor students are a valuable resource and can relate their experiences and answer questions as only students can! An informational 8<sup>th</sup> grade parent/student night is conducted by the staff for prospective students and parents; Manor students are also involved and make presentations on topics such as project-based learning; various assessments, including extensive written and oral communication; group work; the role of technology; and the use of the web portal by students and parents. The Manor students also dispel common misconceptions, such as there is no homework, you can leave class whenever you are finished, the school is not college prep, and it's easier than other schools. Applications for admission are provided and in the late spring a lottery is conducted. The only requirement is that one female and one male are chosen at random until the approximately 100 slots are filled. A parent/student night for new students is then conducted to cover in depth the intricacies of the school and requirements for graduation. During the summer the freshmen teachers conduct a two day Bridge Program for new students. Early in the school year a surprise lock-in of all freshmen is conducted by upperclassmen on a Friday afternoon and evening.

Manor realizes that project-based learning is new for all these students, so the initial projects in all classes are more structured and shorter in duration. In World/Geo Literature, the first two projects are How to Manage Conflict (how to work in groups) and Manor on the Move, which involves a campaign for community resources.

The weekly advisory provides all students with an adult to offer emotional support, academic oversight, and assistance for four years. Weekly all-school assemblies called Circle Time provide a vehicle to meet collectively as an entire school community to celebrate and recognize student and faculty accomplishments, make important announcements, or continue with team-building activities.

One common theme from all students, regardless of grade level, is the level of academic and personal support provided by staff. Students consistently mentioned that the smaller school community coupled with the project based learning environment allows their teachers to get to know, interact, and assist students better than in the traditional, larger high school.

## **9. Leadership/Systems Approach**

Schools applying to become a New Tech school complete a rigorous planning phase that precedes the invitation to join the New Tech High School Network of Schools. Manor had to demonstrate not only the ability to plan, but also had to demonstrate that it had the capacity to perform, access to adequate financial resources, and a commitment to be as true a replication of the model as possible. Principal Steven Zipkes was hired a year before Manor opened to oversee all phases – from redesign and construction of the former middle school to the hiring of staff. He completed the Principal's Residency Program, as well as two leadership training sessions at Napa New Tech. This was followed by a week-long training for all staff sponsored by the New Tech Foundation on problem-based learning and the New

Tech Learning System. Manor New Technology welcomed its first freshmen and reduced sophomore classes in the fall of 2007 with 14 teachers, half of who were new to, but passionate about and trained in, project-based learning. The school has maintained a close relationship with the UTEACH program at the University of Texas, serving as a field laboratory for many of their students and future Manor teachers.

The administrative team at the high school includes the principal, dean of student services, and two master teachers. They collaborate with classroom teachers on curriculum, instruction, and assessment, and provide the technical and logistical support needed. While there is a shared library of lessons, rubrics, and course material from the New Tech Foundation, considerable time and energy has been spent during the first three years creating project-based lessons and scaffolding activities for students. This is an ongoing and extensive task; teachers have taken on grade-level and department leadership roles to develop rigorous and relevant projects with authentic assessments for students. Interviews with teachers confirm that they all act as leaders within the school and are empowered to design and implement activities they feel will be beneficial to students and the overall program. They are given much leeway, and “Is there a better way?” has replaced “no” in the Manor vocabulary.

The national Teacher Advancement Program (TAP) is a comprehensive, researched-based reform model that allows teachers to pursue a variety of positions throughout their careers – career, mentor, and master teacher – depending on their interests, abilities, and accomplishments. As teachers move up the ranks, their qualifications, roles, and responsibilities increase – and so does their compensation. This allows teachers to advance professionally without having to leave the classroom.

Master and mentor teachers must have expert curricular knowledge, outstanding instructional skills, and the ability to work well with other adults. At Manor they take on additional leadership roles within the school, and with the principal serve on the TAP Leadership Team. The three mentor teachers maintain a close relationship with their assigned teachers and serve as an important resource and support with regard to everything from data analysis to instructional practices. Two master teachers are full-time instructional support specialists, and are critical in the development of effective project-based learning experiences and instructional strategies. Mentor and master teachers play important roles in the professional development of all staff, especially during the weekly Cluster and Critical Friends meetings. Together with the principal, mentor and master teachers observe and evaluate staff as part of the Teacher Advancement Program.

## **10. Professional Learning Community**

One significant feature of Manor is the extensive, year-round professional development afforded all staff. Typically the time spent each year exceeds 150 hours. Staff interviewed felt that such professional development is necessary and critical to success, as they had to not only adjust how they teach, but also what they teach. A significant number of teachers at Manor are new teachers, with many of the mathematics and science teachers from the UTEACH program at the University of Texas. The level of support as they commenced their careers was cited as integral to their growth as an educator. Even veteran teachers expressed that they felt like new teachers once again, and appreciated not only the time but also the assistance of fellow teachers, mentor and master teachers, the dean of students, the New Tech coach, and the school principal.

Each Monday the school employs a two hour delayed start for students so that staff can engage in weekly professional development meetings, or as some call it, “teacher school.” The Cluster and Critical Friends meetings allow teachers to introduce or critique projects, analyze data and plan accordingly, or learn effective instructional strategies that have been field tested in a Manor classroom.

Since the summer prior to opening, all teachers and administrators have attended either the New Schools Training or All Schools Conference sponsored by the New Tech Foundation every year. The New Schools training is an intensive five-day program that provides an opportunity for participants to learn about the New Tech model, including PBL and the New Tech Foundation Learning System tools. For part of the time participants are placed in the role of a student in a PBL unit so that they can experience PBL first-hand. Teachers receive training on how to develop a standards-based PBL unit and

begin working on a project they can implement in their own classrooms. Additional time is spent at the home school working on curriculum and other projects planned for the year.

The All Schools Conference provides an opportunity for teachers, administrators, IT staff, and support staff to collaborate and share best practices. Participants consider a variety of topics, including culture, curriculum, use of technology, and sustainability, as well as meet in subject area and school groups.

Because Manor is a T-STEM school, all teachers have attended a week-long training at Texas Tech on teaching engineering across the curriculum. In addition, all teachers have received formative data management training and assessment writing training from Margaret Kilgo. Manor teachers are extremely adept at analyzing student strengths and weaknesses, but also at developing effective strategies and interventions to address and remediate deficiencies.

Manor has started a project-based learning institute called Think Forward to assist in the professional development of teachers in the district, state, and beyond, with regard to 21<sup>st</sup> century skills and PBL strategies. This four-day institute is run by the master teachers six times a year (twice each in the fall, spring, and summer) and its reputation has drawn participants from all across the United States.

## **11. Meeting the Needs of All Learners**

There is no tracking of students at Manor and all students are able to enroll in any of the heterogeneously grouped core and elective courses offered. One of the benefits of project-based learning is that groups can draw on the individual strengths of each member; students of all abilities, talents, and learning styles are able to demonstrate proficiency and competence in a variety of ways. One misconception that students and teachers dispelled quickly is that project-based group learning decreases contact with teachers. Teachers monitor student progress very closely using the technology available, and provide instantaneous individual and group support when needed. Most students like the autonomy provided under PBL; however, students report that there are more one-to-one interactions between students and teachers, and that the opportunity for immediate extra help has increased.

Students with disabilities and ELL students are fully mainstreamed in all classes. There is a special education teacher assigned to Manor half time, primarily for push-in support. There are no curriculum modifications for students with special needs; however, accommodations with time and testing are made in accordance with the I.E.P. The many visitors to the school would be hard pressed to identify students with disabilities – and that is just how it should be, according to the staff at the Manor.

Very careful data analysis occurs at Manor with regard to student progress – or lack thereof – on meeting the benchmarks for the TAKS. Every project and rubric is designed to meet state and national course standards. Warm-ups, quizzes, and tests provide teachers with feedback on student progress, and instruction can be adjusted accordingly. Students who are not successful on the TAKS are provided small group and individual support during the year via tutorials conducted by the classroom teachers.

Students are very complimentary regarding the level of support they receive when needed. Teachers are available throughout the day, during class, after school, via email, and often on Saturdays to work with students.

### **Lessons Learned**

- A strong vision, educational philosophy, and guiding principles enhance the work of the faculty and unite the educational program under a common set of beliefs.
- The objective of education must be to prepare students for *their* future.
- Administrators and teachers have become less involved in managing instruction and spend more time devising real-world instructional opportunities with authentic assessments for students.
- Continuous and sustained professional development is critical to the success of school reform efforts.

- Partnerships with businesses and the community provide necessary support and real-world experiences for students and staff.
- Collaboration should be modeled among staff members at all times if students are expected to be collaborators in the classroom.
- An effective whole-school approach requires a commitment to partnerships with students, staff, community, and parents on a regular and meaningful basis. All stakeholders must be involved in decisions, and communication is critical to success.
- Relationships are important in establishing a caring, respectful, and trusting atmosphere to support student success both academically and socially.
- Technology integration is essential and should be a tool for instruction, not the subject of instruction.
- Teacher recruitment and selection is important. There is a steep learning curve to plan and deliver an effective PBL activity. Work does not decrease under the New Tech model.

### **Principal's List of Greatest Strengths**

Principal Steven Zipkes shared his list of the school's greatest strengths.

1. *Project Based Learning/Project Based Instruction.* This complex system of instruction supports complete student growth. Total student engagement and ownership creates an environment conducive to success, because the students feel responsible for developing respect and trust. Students develop strong work ethics, communication skills, and community service commitments. As a result, they are prepared for higher-level education and the 21<sup>st</sup> century work force, whether locally or internationally.
2. *Teacher Quality.* The teachers are totally committed to project-based learning and instruction that focus on data-driven decisions. They continually strive to model to the students and one another the expected culture and philosophy of the complex system upon which the school is built. The teachers are in constant communication regarding cross-curricular opportunities, project evaluations, and the use of student data. They exceed the definition of teacher, because not only do they instruct, but also facilitate, design, and enlighten.

### **Effective and Efficient Best Practice**

Throughout the year all teachers have the opportunity to engage in many quality professional development programs. However, the campus program of professional development for two hours every Monday morning establishes a professional learning community that allows for outstanding collaboration among staff and sustainability of the program. During weekly professional development teachers meet in groups called Clusters. At this time classroom strategies are taught and discussed. Student data is also evaluated for decisions and project building. Content areas often meet in groups to focus more intensively on specifics within their field and for curriculum development.

Critical Friends is a highly effective evaluation method practiced by the teachers on a regular basis. During this time one teacher or a pair of teachers present a project designed for their students. Teachers share what they like about the project, what they wonder about the project, and what might be productive next steps in its development. All criticism is only positive and shared in a very professional format. The staff is truly empowered to create real-world, rigorous learning experiences that will provide students with a world-class education second to none.